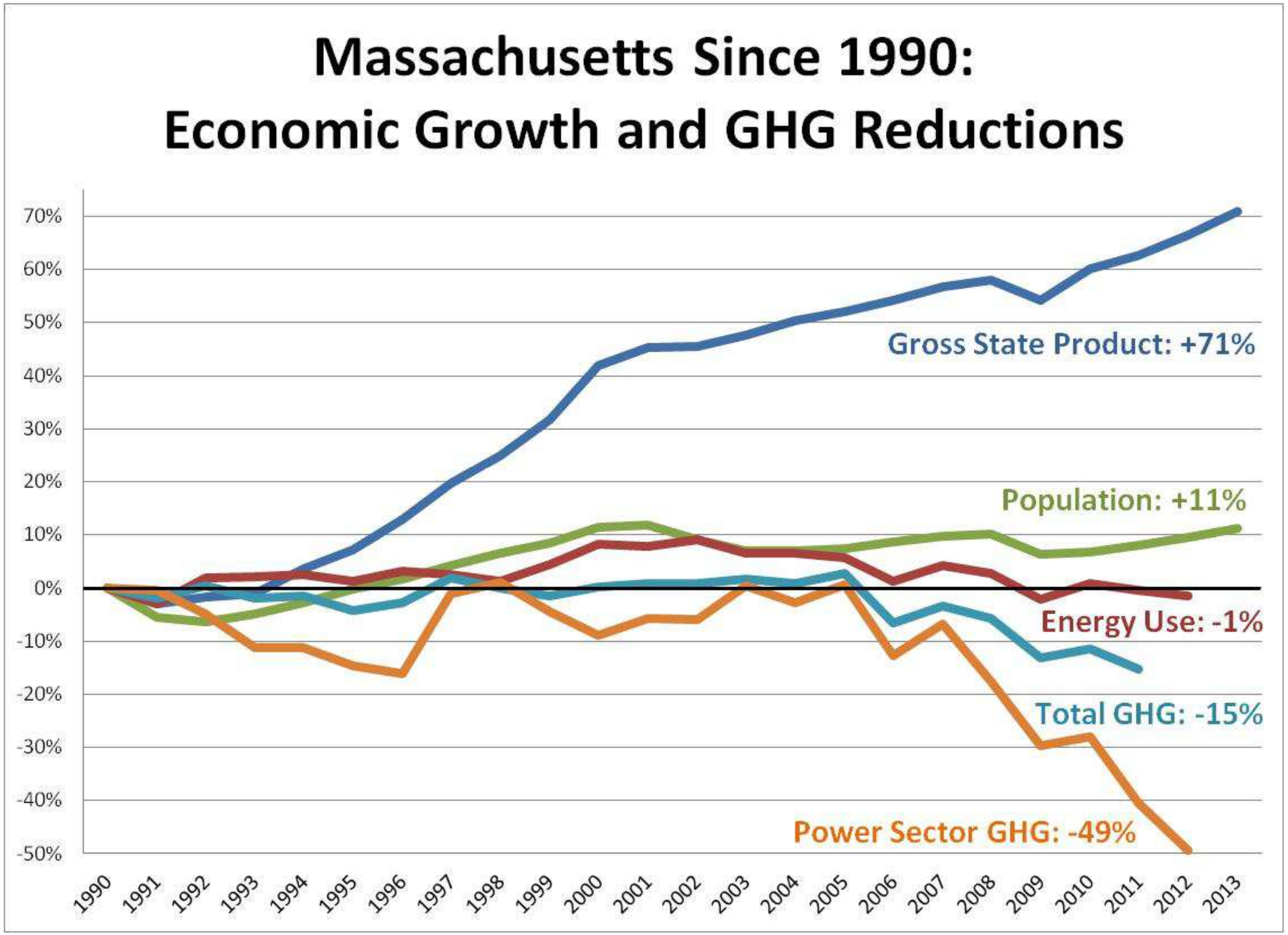
# Massachusetts Since 1990:
# Economic Growth and GHG Reductions



# Clean Energy Standard (CES) Stakeholder Meeting

Massachusetts Department of Environmental Protection

Boston, MA

October 27, 2014

# Presentation Outline

- Background
- Key Concepts and Questions
- Discussion Draft Regulation
- Clarification and Technical Questions
- Comment on Key Questions

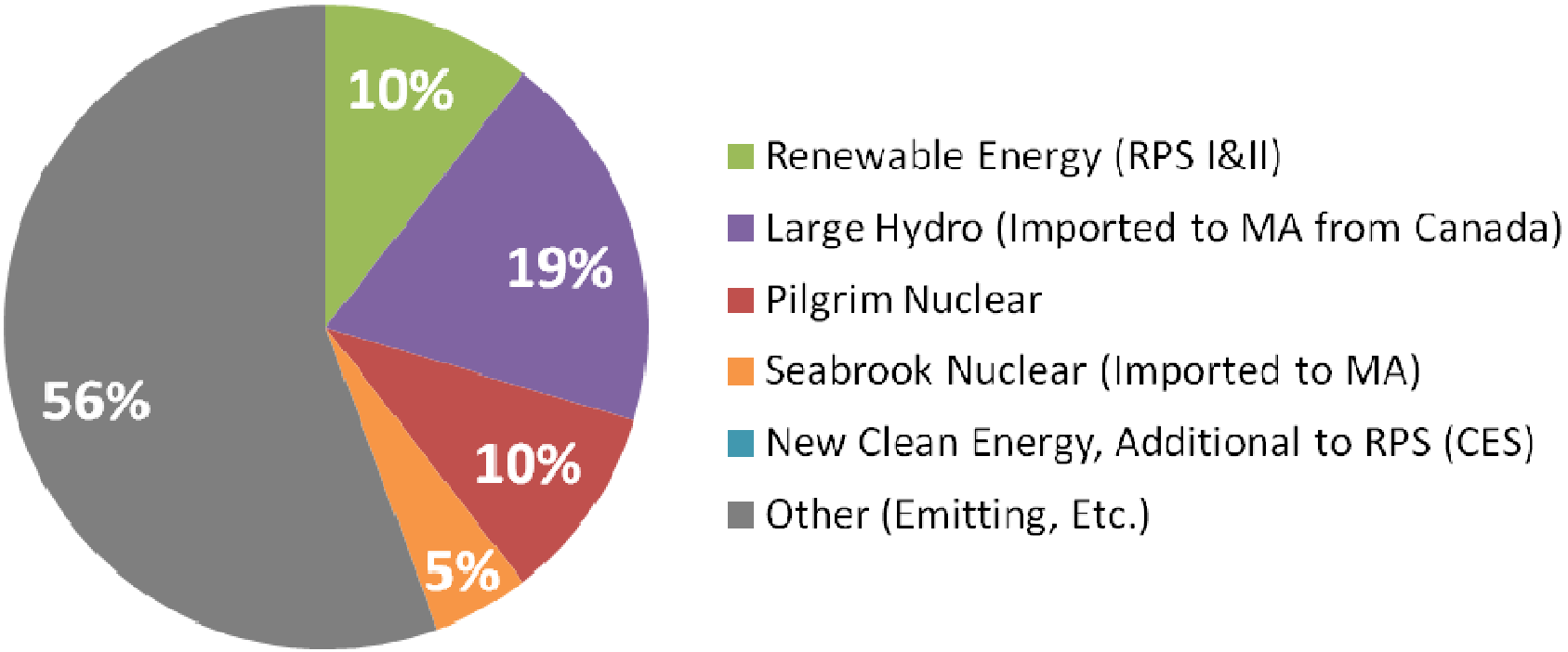
# Background - Timeline

- 2008 – Massachusetts Global Warming Solutions Act requires GHG emissions reductions of 80% by 2050 (from 1990 levels).
- 2010 - Massachusetts Clean Energy and Climate Plan for 2020 (CECP) includes *Clean Energy Performance Standard* strategy.
- 2013 – MassDEP, DOER, and DPU work with Synapse Energy Economics to study potential Clean Energy Standard (CES) program designs.

# Background - CECP 2050 Scenarios

- Electrification Scenario: ***By 2050, 100% of the electricity consumed in Massachusetts comes from near zero carbon sources:*** *renewables, pre-2000 nuclear facilities, and a small amount of biomass, and this constitutes 112% of what total Massachusetts electricity use was in 2007, or 9 times the amount of low carbon supply in 2007. The state no longer uses any electricity from natural gas, coal, or oil.*
- Efficiency and Conservation Scenario: ***By 2050, about 80% of the electricity consumed in Massachusetts comes from near zero carbon sources:*** *renewables, pre-2000 nuclear facilities, and a small amount of biomass used in high efficiency combined-heat and-power applications. The low-carbon power is about five times the amount used in Massachusetts in 2007 (about half the amount of low carbon power needed in the electrification scenario). The remainder is from natural gas generation.*

# Background - Electricity Used in MA




Source: 2012 Massachusetts GHG Emissions Inventory.

# Background - 2013 CES Study

- *A Clean Energy Standard for Massachusetts* by Synapse Energy Economics:
  - Identified "share of sales" (i.e., RPS – like) structure as most viable
  - Identified potential issues
    - "shuffling" – clean MWhs from existing facilities are counted toward compliance, without any changes in generation
    - "windfall profits" – existing facilities profit from CES at ratepayer expense, without any changes in generation

# CES – Key Open Questions (Preview)

- Which companies should be regulated? (include munis?)
- Which generation technologies are considered clean?
  - Portfolio approach (list of technologies)
  - Emission threshold (e.g., 50% below NGCC)
- Are existing generators eligible?
- Stringency?

# CES – Key Design Concepts

- Point of regulation is electricity sales (like RPS, though not necessarily identical).
- Share of sales structure, with use of GIS certificates for compliance (like RPS).
- Clean energy includes technologies not eligible for RPS.
- Absent carbon capture and sequestration, clean energy does not include fossil fuels.

# CES – Discussion Draft Regulation

- MassDEP has distributed a discussion draft regulation to facilitate stakeholder review and input.
- The following slides describe the discussion draft regulation.
- MassDEP welcomes input on ALL aspects of the CES.

# Regulated Entities

- The discussion draft would:
  - Regulate all electricity sellers regulated by RPS, and
  - Also regulate munis
- Other options include:
  - Exempting munis (consistent with RPS)

# Compliance

- The discussion draft would:
  - Require regulated entities to demonstrate the use of clean energy for a specified percent of retail electricity sales each year.
  - Count RPS compliance toward CES compliance (so the CES percentage would exceed the RPS percentage for each year).
  - Require the use of GIS certificates to demonstrate compliance (i.e., rely on clean energy certificates, or "CECs" – RECs would count as CECs).
  - Allow the use of alternative compliance payments (amount TBD)
- Other options include:
  - Do not count RPS compliance toward CES compliance (so RECs would not count as CECs and the CES percentage would not necessarily exceed the RPS percentage).
  - Allow multi-year compliance periods for CES (i.e., X% total 2016 – 2020 sales).



MassDEP

# Eligible Generators

- The discussion draft would:
  - Qualify clean energy generators based on a generic 50%-below-natural-gas threshold.
  - Require clean energy generators that are RPS-eligible to qualify through DOER (not DEP).
  - Limit eligibility to generators that commenced operation after a particular date. (No date is specified in the regulation, but the likely result would be that all existing nuclear power plants would be excluded, but some newer Canadian hydropower generators could qualify.)
  - Limit eligibility to the same geographic area as RPS (ISO-NE and adjacent control areas).
- Other options include:
  - Include a list of eligible technologies (vs. an emissions threshold)
  - Include existing generators

# Other Technical Issues

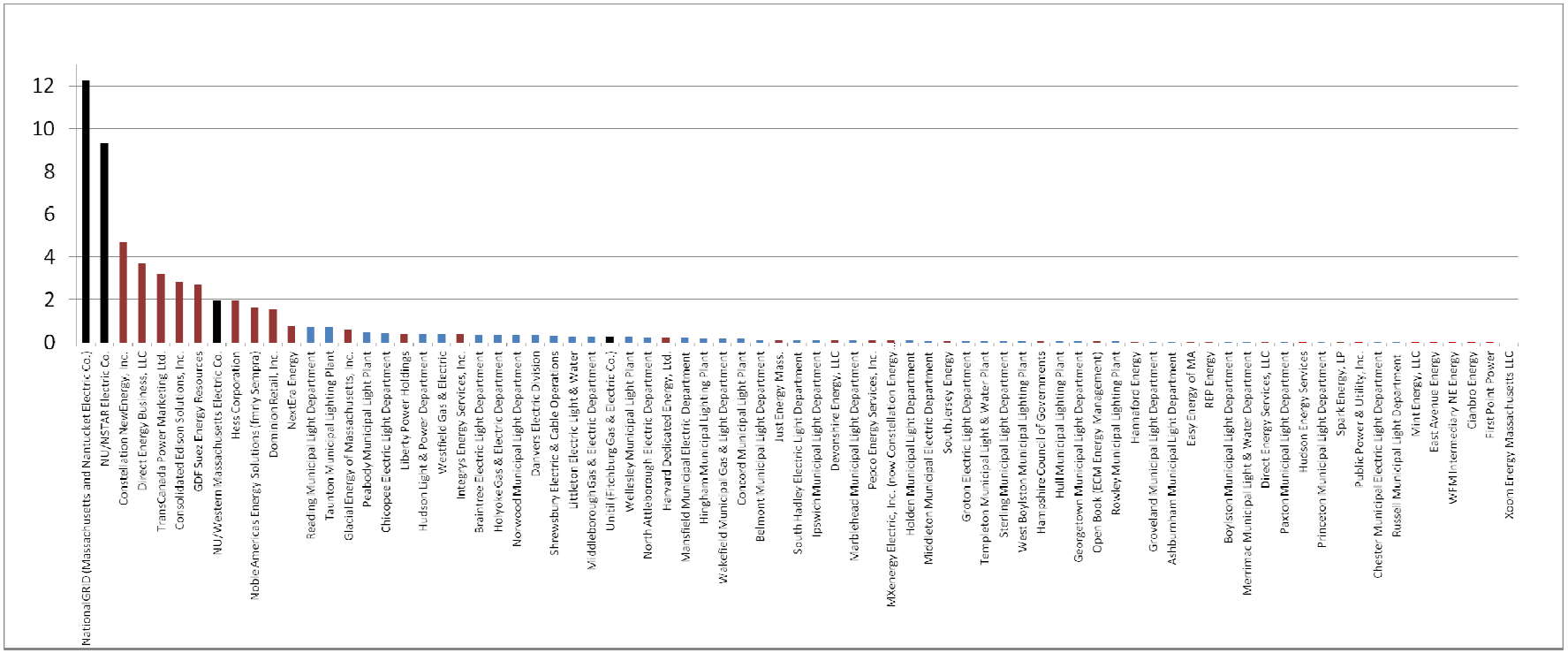
- The discussion draft includes provisions identical to DOER's RPS regulation to address:
  - Banking of unused CECs
  - Behind the meter  generation, off-grid generation, and aggregation of multiple generators
  - Qualification process, including unit identification in NEPOOL-GIS
  - Transmission rights for imports from adjacent control areas
- Other options include:
  - Remove provisions that may not be relevant for CES (as noted in discussion draft)
  - Identify units by technology type, without a qualification process
- The discussion draft also includes revised GHG reporting provisions for electricity sellers

# Key Open Questions (Discussion)

- Which companies should be regulated? (include munis?)
- Which generation technologies are considered clean?
  - Portfolio approach (list of technologies)
  - Emission threshold (e.g., 50% below NGCC)
- Are existing generators eligible?
- Stringency?

# Which Companies Should be Regulated?

## 2012 Massachusetts Retail Electricity Sales, by Company, TWh




- Distribution Companies (Basic Service Suppliers)
- Competitive Suppliers
- Municipal Light Plants

# Which Generation Technologies?

- Any technology that meets a specified emission rate (e.g., 50% below new natural gas combined cycle generators)?

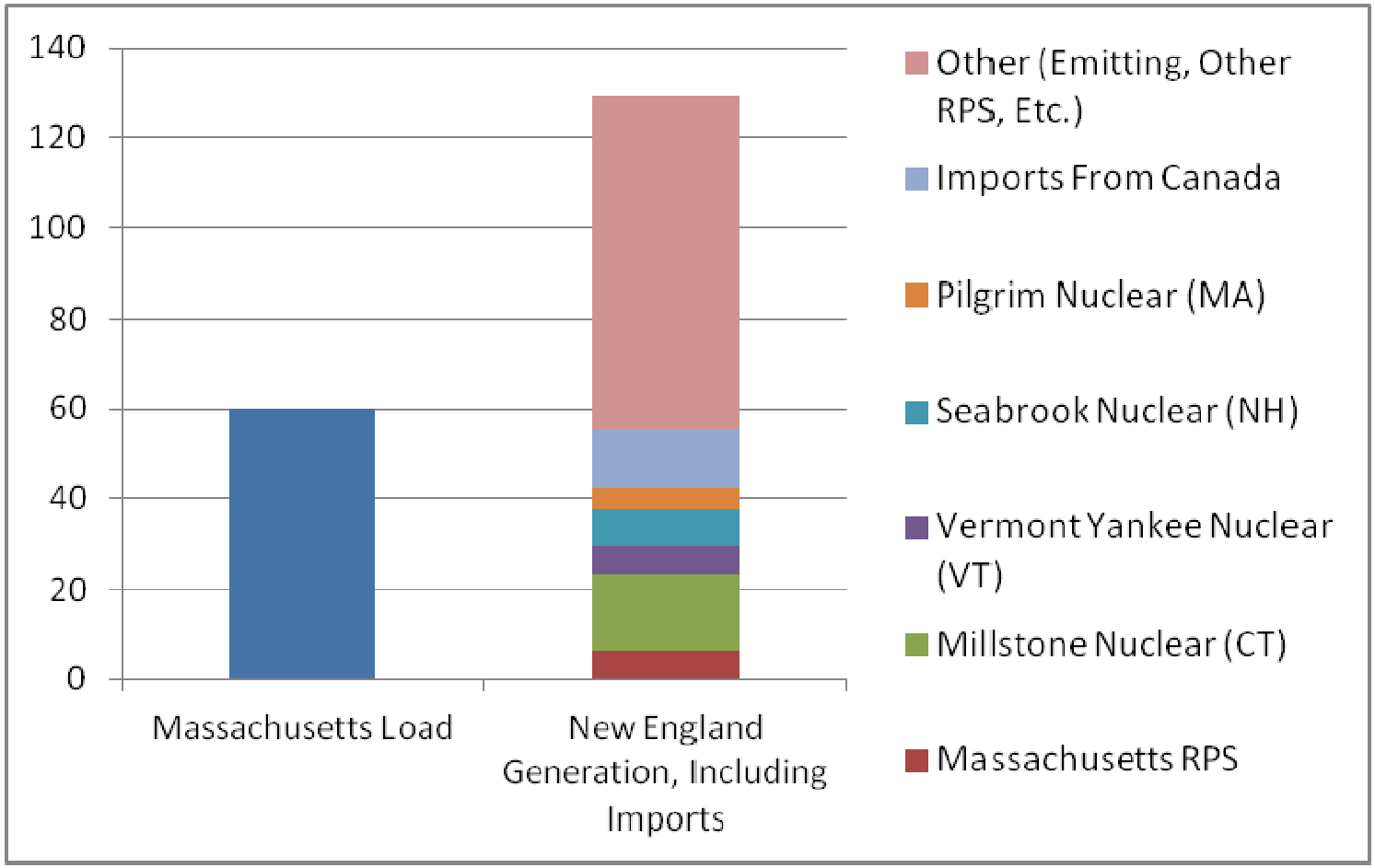
Fossil with CCS?

Large Hydro?

Nuclear?

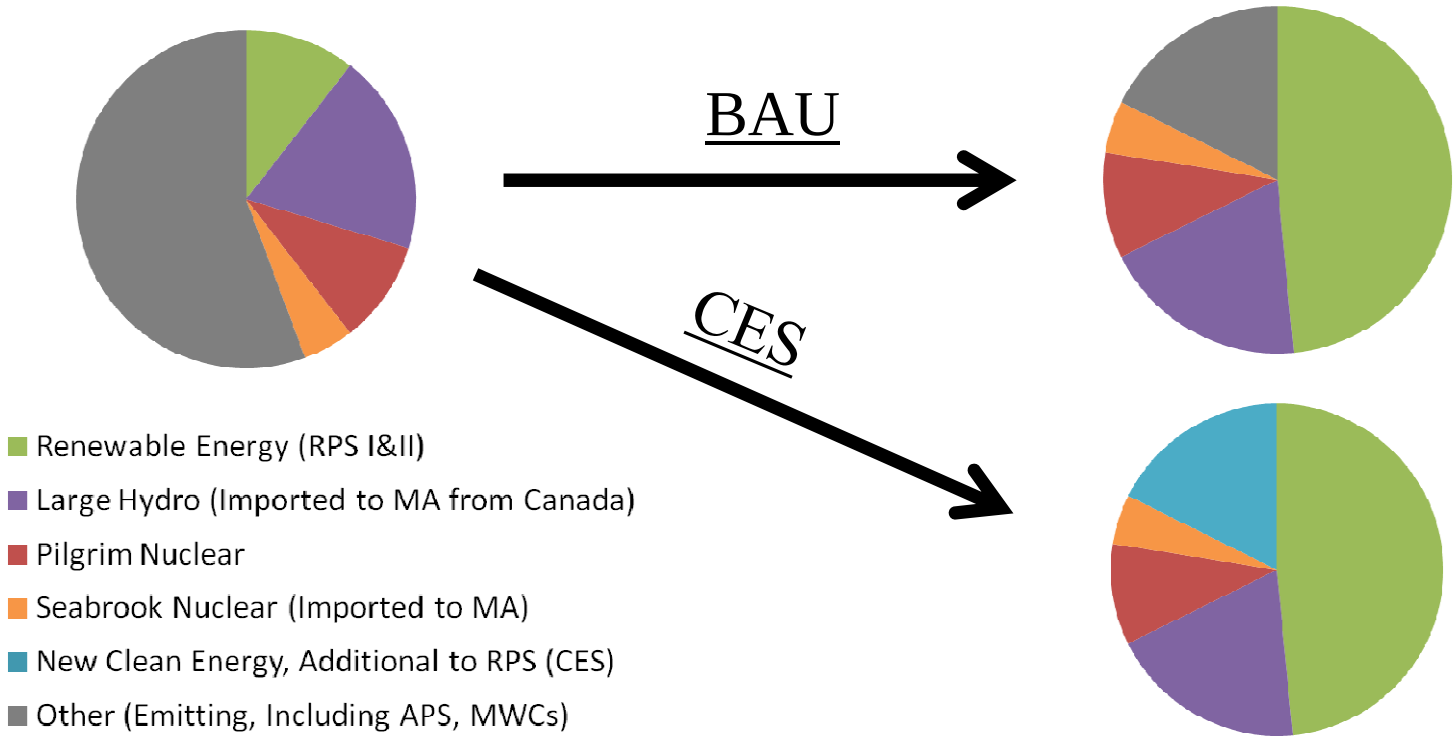
- (Renewables would be eligible through RPS.)

# Are Existing Generators Eligible?




Source: 2012 Massachusetts GHG Emissions Inventory.

# 2050 Stringency?




- 2020 target could be based on the Clean Energy Imports strategy included in the CECP.
- 2021 – 2050 targets could be set on a linear schedule
- Role (and amount) of ACP?

Information is posted at:

http://www.mass.gov/eea/agencies/massdep/climate-energy/climate/ghg/ces.html

Staff Contact:

Will Space
william.space@state.ma.us
617-292-5610

Comments (requested by Monday 11/3):

climate.strategies@state.ma.us